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ABSTRACT

This report summarizes survey data on physical facilities in institutions of higher education in 1968, relates them to enrollments for the same period, and contrasts them with a somewhat similar analysis in 1957. The analysis highlights the differences between groups of colleges and universities classified by institutional control, level, and enrollment size in the distribution of their physical facilities among various room types and the organizational units to which they were assigned. Institutional facilities were also analyzed on the basis of ratios of square feet to number of students and compared with similar data for 1957. (Author/HS)

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HIGHER EDUCATION

ED 074990

Distribution of Physical Facilities Among Institutions of Higher Education Grouped by Level, Control, and Enrollment Size

FALL 1968

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DISTRIBUTION OF PHYSICAL FACILITIES AMONG INSTITUTIONS OF HIGHER EDUCATION GROUPED BY LEVEL, CONTROL, AND ENROLLMENT SIZE

FALL 1968

by
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INTRODUCTION

This report summarizes survey data on physical facilities in institutions of higher education in 1968,[1] relates them to enrollments for the same period,[2] and contrasts them with a somewhat similar analysis in 1957.[3] The study is based in part upon an analysis made by the authors for an *ad hoc* study group concerning higher education construction programs in the Office of Education.[4] It also updates similar data reported in a paper presented to the Association of Executive Directors of Higher Education Facilities Commissions.[5]

The 1968 facilities survey marked the initial use of a new classification system.[6] Although a few misinterpretations by respondents were apparent, the data were judged to be sufficiently accurate to permit meaningful summaries and comparisons.

The analysis highlights the differences between groups of colleges and universities classified by institutional control, level, and enrollment size in the distribution of their physical facilities among various room types and the organizational units to which they were assigned. Institutional facilities were also analyzed on the basis of ratios of square feet to number of students and compared with similar data for 1957.

1/ Harold L. Dahnke and Paul F. Mertins. Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968, OE-51007-68. U.S. Department of Health, Education, and Welfare, Office of Education. Washington: U.S. Government Printing Office, 1970.

2/ Marjorie O. Chandler. Opening Fall Enrollment in Higher Education, 1968: Part A - Summary Data, OE-54003-68. U.S. Department of Health, Education, and Welfare, Office of Education, Washington: U.S. Government Printing Office, February 1969.

3/ E. Eugene Higgins and Mary B. Fuller, College and University Physical Facilities Survey, Part 3: Inventory of College and University Physical Facilities, December 31, 1957, OE-51007. U.S. Department of Health, Education, and Welfare, Office of Education. Washington: U.S. Government Printing Office, 1965.

4/ Chalmers G. Norris, et al. Federal Support for Higher Education Construction: Current Programs and Future Needs. U.S. Department of Health, Education, and Welfare, Office of Education, Washington: U.S. Government Printing Office, July 10, 1969.

5/ Harold L. Dahnke and Paul F. Mertins. "Preliminary Report on the Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968." An unpublished paper given to the Association of Executive Directors of Higher Education Facilities Commissions at Miami Beach, Florida, July 1969.

6/ Nicholas A. Osso and Charles T. Roberts. Higher Education Facilities Classification and Inventory Procedures Manual, OE-51016. U.S. Department of Health, Education, and Welfare, Office of Education, Washington: U.S. Government Printing Office, 1968.

SUMMARY OF 1968 FACILITIES INVENTORY DATA

The Higher Education Facilities Classification and Inventory Procedures Manual 7/ outlines a multidimensional classification scheme for college and university physical facilities. The four dimensions of this system are type of room, organizational unit, subject field, and function. In the 1968 survey, organizational unit, a partial list of subject fields, and a condensed version of the type-of-room classification were used. No data on the function category were requested.

Tables 1, 2, and 3 present two-dimensional summaries employing major organizational-unit and room-type categories. Table 1 is based upon all institutions, table 2 on publicly controlled colleges and universities (hereinafter also referred to as public colleges and universities, public colleges, or public institutions), and table 3 on privately controlled colleges and universities (hereinafter also referred to as private colleges and universities, private colleges, or private institutions). The data in each table are actual responses inflated to national totals. 8/

Classified by type of room (independent of organizational unit):

- Residential space was the predominant type in all institutions (table 1), publicly controlled (table 2), and privately controlled (table 3). In public colleges and universities the proportion was slightly greater than one-fourth of the total; in private colleges and universities, slightly greater than one-third.

- In public institutions, laboratory space was second largest in amount, followed by general-use facilities. In private institutions, these two types were reversed with respect to amount.

- Office space was fourth in order in both public and private institutions.

- Classroom space ranked sixth in publicly controlled institutions and fifth in privately controlled colleges and universities.

- Classrooms comprised nearly 9 percent of the assignable square feet in both public and private institutions as a group.

7/ See footnote 6/.

8/ Data reported by responding institutions were weighted by appropriate factors to compensate for unreported data. See Methodology, appendix A, in Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

Classified by organizational unit (independent of room type):

- In publicly controlled institutions, the greatest amount of space was assigned to departments of instruction and research, with the second largest amount assigned to auxiliary services. In privately controlled institutions, the order of ranking for these two organizational units was reversed. Together they accounted for 77 percent of the space in the public and 79 percent in the private colleges and universities.

- The third greatest amount of floor space was assigned to general administration and institutional service units, followed by the library category, for both types of institutional control.

Classified by type of room and organizational unit:

- Residential type facilities assigned to auxiliary service units constituted the largest category of assignable square feet in both public and private colleges and universities.

- Laboratory space in departments of instruction and research was second largest, for both types of institutional control.

- Public colleges assigned the third largest amount of their space to classrooms for departments of instruction and research, with general-use space in auxiliary services units fourth. These same two categories ranked in fourth and third place, respectively, in private colleges.

- The four primary categories combined constituted 57 percent of the total assignable square feet in public colleges and universities and 60 percent in private institutions.

Tables 4 and 5 summarize by institutional control and level the physical facilities of responding institutions.[9/] Table 4 classifies space by type of room, table 5, by selected organizational units.

Tables 4 and 5 show differences associated with institutional level and control. For example, public 2-year colleges differed not only from other publicly controlled institutions, but also from private 2-year colleges. This was true for the distribution of space by type of room and for the assignment of space to various organizational units.

9/ For additional data on the 2,050 responding institutions, see appendix B in Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

By type of room for two types of institutional control and three institutional levels:

- Residential space was highest in all instances except publicly controlled 2-year colleges, where it ranked sixth among the nine room-type categories.

- Public universities and private universities both had the same ranking for the four largest space categories. In descending order, these were residential, laboratory, office, and general-use.

- Private 2-year colleges appeared to resemble private other-4-year-and-over colleges more than their public counterparts. Private 2-year colleges matched private other-4-year-and-over colleges on the first three largest room types: i.e., residential, general-use, and classroom. The three largest categories of space in the public 2-year colleges were, in descending order, laboratory, classroom, and general-use. The fourth largest amount of space for both public and private 2-year colleges was special-use.

Table 5 reflects an attempt to recast the inventory data into terminology used in the higher education facilities construction programs.[10/] Omitted from this table is space which was assigned to noninstitutional agencies as well as space designated as unassigned, that is, facilities which were inactive, unfinished, or in the process of alteration or conversion. The residential category represents all reported residential space; that is, residential space originally reported in other organizational units has been subtracted from them and consolidated in the residential classification in table 5.

By selected organizational units for two types of institutional control and three institutional levels:

- Of the three main categories, all institutions, regardless of control or level, assigned most of their in-use space to academic units. Except for public 2-year colleges, residential space ranked second, with other auxiliary space third and last.

- The colleges and universities reported relatively different proportions for the three main categories. Of the total in-use facilities, roughly one-half were assigned to academic units in other-4-year-and-over institutions, both public and

10/ For a more complete discussion of the correspondence between the terminology used in the facilities construction program and the 1968 inventory data, see Appendix.

private, and in private 2-year colleges. In universities, public and private, the ratio of academic to the total in-use space was 3 to 5. In public 2-year colleges, it was greater than 4 to 5.

- In all cases, facilities assigned to departments of instruction and research constituted the majority of the academic space.

- Library space represented a greater proportion of the total academic space in private other-4-year-and-over institutions than in any other college or university category.

In addition to institutional level, size of institution, as measured by the headcount enrollment,[11] is another factor which demonstrates certain institutional group differences. Tables 6, 7, and 8 show the percentage of assignable square feet, by type of room, for seven enrollment-size classifications in all responding institutions (table 6), in publicly controlled responding institutions (table 7), and in privately controlled responding institutions (table 8). In interpreting the data in table 8, it should be kept in mind that few institutions make up the percentage breakdown in the larger enrollment categories of the privately controlled institutions.

By type of room:

- Classroom space tended to show an inverse relationship to enrollment size; that is, larger institutions devoted less of their space to classroom purposes than did smaller institutions. This tendency appeared to be more pronounced in publicly controlled colleges and universities than in privately controlled institutions.

- In the case of private institutions, laboratory space showed a fairly steady increase as the enrollment size of the institution increased. In public institutions the percentage of laboratory space showed no consistent tendency, but the greater percentages fell at or near the extreme enrollment sizes.

- Office space represented a fairly constant percentage of the total space in the smaller institutions, both public and private. The percentage increased noticeably at the 10,000-24,999 enrollment-size level, and again at the 25,000-and-above level in the publicly controlled colleges and universities. In the privately controlled group, the percentage started to increase at the 2,500-4,999 enrollment-size level.

11/ For a discussion of the methodology of assigning institutions to enrollment-size classifications, see appendix D of the Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

- Study facilities represented a fairly constant percentage of the total reported space in both publicly and privately controlled institutions.

- Special-use facilities also showed a fairly constant percentage of the total in both publicly and privately controlled institutions, although a slightly smaller percentage was found in the private group of institutions.

- General-use facilities tended to decrease as a percentage of total space as the enrollment size of the institution increased. From the smallest to the largest enrollment-size group of institutions, the figure fell from 22 to 8 percent.

- Supporting facilities stayed in a relatively narrow range of 5 to 8 percent.

- Residential facilities ranged from 33 to 26 percent, with little relation to size (table 6).

SELECTED AVERAGES AND RATIOS FOR INSTITUTIONS GROUPED BY CONTROL AND LEVEL

Tables 1 through 8 summarize the inventory data and point up some of the differences among institutions grouped by control, level, and enrollment size. Tables 9, 10, and 11 provide the basis for analyzing differences among institutions grouped by level and control with respect to the ratio of assignable to gross[12/] square feet, average assignable square feet per responding institution, average number of full-time-equivalent students[13/] per responding institution, and average assignable square feet per responding institution by type of room and by selected organizational units.

With respect to gross square feet, table 9 shows:

- Ninety-two publicly controlled universities, the second smallest group of institutions numerically, had the greatest number of gross square feet.
- The largest group of institutions, 883 privately controlled other-4-year-and-over colleges, had the second highest amount of gross square feet.
- Two-year colleges had the least gross square feet, especially private 2-year colleges.

Concerning the ratio of assignable to gross square feet, table 9 indicates:

- A narrow range of ratios clustered around an average of .69.
- The lowest ratio, .66, was found in the privately controlled universities.
- The highest ratio, .73, occurred in the public 2-year colleges.

12/ For the purpose of this publication, "gross area" is defined as the sum of the floor areas included within the outside faces of exterior walls for all stories, or areas, which have floor surfaces; and "net assignable area" is defined as the sum of all areas on all floors of a building assigned to, or available for assignment to, an occupant, including every type of space functionally usable by an occupant. For a more complete discussion of these and other terms, see U.S. Office of Education, Higher Education Facilities Classification and Inventory Procedures Manual, 1968.

13/ Full-time-equivalent students were defined as the sum of all full-time plus one-third of all part-time students.

In comparing the "size" of these groups of institutions as measured by the extent of their facilities (average assignable square feet per responding institution) and by the number of students (average number of full-time-equivalent students per responding institution), table 9 suggests that:

- Public universities, with an average slightly in excess of 3.5 million assignable square feet, had approximately twice as much space per institution as did private universities. The public universities, however, had more than twice as many full-time-equivalent students--roughly a 9-to-4 ratio.

- The public other-4-year-and-over group of institutions had nearly 2½ times as many assignable square feet per institution as did their private counterparts, but they had more than four times as many full-time-equivalent students.

- The public 2-year group of colleges had 37 percent more space than did the private group of 2-year colleges, but they enrolled nearly 300 percent more full-time-equivalent students.

- In total, the public institutions as a group had 115 percent more assignable square feet but 247 percent more full-time-equivalent students, on the average, than the private institutions.

Tables 10 and 11 continue the comparison of average number of assignable square feet per institution with full-time-equivalent enrollment data when the institutions are grouped by institutional control and level. Table 10 makes the comparison on the basis of type of room, and table 11 on the basis of selected organizational units.

By type of room, table 10 shows that:

- The approximate 9-to-4 full-time-equivalent student ratio for public as compared to private universities was essentially the same ratio that existed between these two groups of universities in space assigned for laboratory, office, and supporting facilities. Somewhat less space than would have been indicated by the relative enrollments existed in the public universities for classroom, study, general-use, medical care, and residential facilities. Somewhat more existed in the case of special-use facilities.

- For the 298 other-4-year-and-over public institutions, the average full-time-equivalent enrollment was more than four times as great as in the 883 private 4-year-and-over group. No category of facilities approximated this enrollment

difference. The public other-4-year-and-over group of institutions had only three times as much space in laboratory and special-use facilities, about 2½ times as much in classroom, office, supporting, and residential facilities, and twice as much, or less, in study, general-use, and medical care facilities.

- Public 2-year colleges had nearly four times as many full-time-equivalent students as their privately controlled counterparts. In the various type-of-room categories, they had only one-third as much residential space, about equal amounts of general-use and supporting space, 1½ times as much study space, approximately twice as much space in classroom and special-use facilities, and 2½ times as much office space. Only in the laboratory space category did the facilities for the public 2-year colleges exceed a ratio of four to one.

By selected organizational units, table 11 indicates:

- The approximate 9-to-4 ratio of full-time-equivalent students for public as compared to private universities was substantially the same relationship which existed for space assigned to the following: total academic activities; total instruction, departmental research, and library; facilities for departments of instruction and research; total other academic activities; organized activity; organized research; general administration and institutional services; residential facilities; and other auxiliary services.

- In the other-4-year-and-over group of institutions, the four-to-one average full-time-equivalent enrollment preponderances in the public institutions was not paralleled by the ratios which existed in the various organizational unit categories, except in the organized activity classification where the ratio approached five to one. In all other instances, the average amount of space in the public other-4-year-and-over institutions exceeded that in the private group of institutions by a factor of three or less.

- For the 2-year colleges, the approximate four-to-one average enrollment ratio between public and private institutions was not matched in any organizational unit category. Indeed, no ratio between public and private colleges in the several facilities categories reached the level of three to one.

ASSIGNABLE SPACE PER FULL-TIME-EQUIVALENT STUDENT

Tables 12 and 13 continue the analysis of institutional differences which existed among colleges and universities grouped by control and level. They present data on the assignable square feet per full-time-equivalent (FTE) student, by type of room (table 12) and by selected organizational units (table 13). For purposes of this analysis, FTE is the sum of the full-time students and one-third of the part-time students.14/

By type of room, table 12 indicates that, per FTE student:

- The ratio was higher in the privately controlled institutions, with 236 square feet, than in the publicly controlled, with 146.

- Among levels of institutions, the ratio was highest in the privately controlled other-4-year-and-over institutions with 249 square feet. The 70 square feet in the public 2-year colleges was the lowest ratio, partially because of their limited amount of residential facilities.

- Classroom space was reported to be greatest in privately controlled 2-year colleges (24 sq. ft.), and lowest in publicly controlled universities (11 sq. ft.).

- Laboratory facilities were largest in universities (33 sq. ft.), both public and private, and lowest in the privately controlled 2-year institutions (14 sq. ft.).

- Study space was highest in privately controlled other-4-year-and-over institutions (16 sq. ft.), universities (15 sq. ft.), and 2-year institutions (12 sq. ft.); the lowest were publicly controlled 2-year institutions (5 sq. ft.).

- Special-use facilities were highest in privately controlled other-4-year-and-over and 2-year institutions (19 and 18 sq. ft., respectively), followed by publicly controlled universities (17 sq. ft.); publicly controlled 2-year institutions were the lowest (8 sq. ft.).

- General-use space was the greatest in privately controlled other-4-year-and-over and 2-year institutions (44 and 37 sq. ft.); the least general-use space occurred in publicly controlled 2-year institutions (10 sq. ft.).

14/ See footnote 2/.

- Supporting facilities were highest in public universities (14 sq. ft.), closely followed by the privately controlled universities and other-4-year-and-over institutions (both at 13 sq. ft.); publicly controlled 2-year institutions again were lowest (4 sq. ft.).

- Medical care facilities were reported to be highest in privately controlled universities (5 sq. ft.), followed by public universities (4 sq. ft.); publicly and privately controlled 2-year institutions reported less than one-half square foot.

- Residential space was highest in the three levels of privately controlled institutions shown (89 to 66 sq. ft.); very little residential space was reported for the publicly controlled 2-year institutions (6 sq. ft.).

By organizational unit, table 13 shows that, per FTE student:

- Privately controlled institutions again had greater amounts of assignable square feet for the various categories except for organized research.

- Space assigned to departments of instruction and research was highest in privately controlled universities and other-4-year-and-over institutions (78 sq. ft.); this was almost double the amount in publicly controlled 2-year institutions (42 sq. ft.).

- Library space was highest in privately controlled other-4-year-and-over institutions (17 sq. ft.), more than three times that in publicly controlled 2-year institutions (5 sq. ft.).

- Total academic space was highest in privately controlled universities (127 sq. ft.), followed by privately controlled other-4-year-and-over institutions (122 sq. ft.), publicly controlled universities (112 sq. ft.), privately controlled 2-year institutions (100 sq. ft.), publicly controlled other-4-year-and-over (76 sq. ft.), and 2-year institutions (56 sq. ft.).

- Space assigned to residential facilities equaled that reported in table 12.

COMPARISONS OF 1957 AND 1968 DATA

Although the physical facilities section of the 1968 Higher Education General Information Survey (HEGIS III) was not primarily designed to permit comparison with an earlier survey, such an analysis was of interest to an ad hoc study group concerning higher education construction programs.15/

The 1957 facilities survey differed from the 1968 survey in several respects. For example, it used a one-dimensional multifactor classification scheme, a different institutional level classification, and degree-credit enrollments. Nevertheless, it was possible to convert the 1957 data to general comparability with 1968 enrollment-size and room-type classifications.16/

Tables 14 and 15 compare the percentage distribution of space for 1957 versus 1968 among type-of-room categories, by various enrollment-size groups of institutions for public (table 14) and private (table 15) institutions.

On balance, the percentage distributions for 1957 and 1968 are quite similar, not only suggesting that the distribution of space within the institutions has not changed much since 1957, but also lending some credence to the conversion of the 1957 data to the current classification scheme.

There are a few substantial differences between the two time periods for certain types of space. Among these are:

- Laboratory space increased from 14 to 19 percent since 1957 in public colleges of 500-999 students, and decreased from 19 to 14 percent in public institutions enrolling 5,000-9,999 students.

- Residential space showed the greatest fluctuation in both public and private institutions. A decrease since 1957 was characteristic of the smaller institutions, with a tendency toward an increase in the two largest enrollment-size groups.

Table 16 compares the assignable square feet per degree-credit student in 1957 and 1968 for public and private institutions, separately and

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15/ See footnote 4/.

16/ For a more detailed discussion of the procedure used in converting 1957 survey data to the 1968 room-type classification, see Appendix.

combined. Data on degree-credit students were used because data on FTE students were not available for 1957. Because information on degree-credit students was not readily available for responding institutions for the 1968 data, inflated data and corresponding degree-credit enrollments were used.

From 1957 to 1968, total degree-credit enrollments increased by 178 percent in publicly controlled institutions and by 59 percent in privately controlled institutions.[17] During the same period, it is estimated that public institutions increased their facilities by 150 percent and private institutions by 95 percent.[18] Thus, publicly controlled institutions apparently added less to their facilities than to their enrollment, while private institutions apparently did the reverse. In other words, public colleges suffered a decline in the number of square feet per degree-credit student, from 143 to 125; private institutions experienced an increase from 162 to 199 square feet per degree-credit student.

By type of room, table 16 indicates that per degree-credit student:

- For all colleges and universities in the United States there was apparently a small decline, from 151 square feet in 1957 to 147 square feet in 1968.

- When data for private and public institutions were combined, the differences between the results of the two surveys, with respect to the several room-type categories, were negligible. Square feet data fell within the probable margin of error involved in converting the 1957 data to the 1968 classification scheme. Special-use facilities may have been the one exception.

- Overall, the publicly controlled institutions decreased from 143 to 125 square feet from 1957 to 1968, while the privately controlled institutions increased from 162 to 199 square feet; that is, a difference between public and private of 19 square feet in 1957 had increased nearly fourfold to 74 square feet in 1968.

17/ Based on total degree-credit students reported in table 1 of College and University Facilities Survey, Part 3: Inventory of College and University Physical Facilities, December 31, 1957 and in table 2 of Opening Fall Enrollment in Higher Education, 1968: Part A - Summary Data.

18/ An absolute comparison is not possible. The figures used were "inflated" facilities figures and degree-credit enrollments for 1957 and 1968. The 1957 data were inflated by assuming the missing institutions had the same ratio of institutions within the same institutional control group.

. Residential facilities accounted for a substantial portion of this difference. Nevertheless, in all room-type categories except office space, the publicly controlled institutions had the same or less space in 1968 than in 1957; except for special-use facilities, the privately controlled institutions had the same or more.

DISCUSSION AND SUMMARY

Throughout this analysis, institutional differences have been apparent. Whether institutions were grouped by control, level, or enrollment size, differences in percentage distributions of facilities and in measures of space per student were evident for both the room-type and organizational-unit classifications. Moreover, those differences which existed in the 1957 survey seemed to have become even greater by 1968.

It would be easy to conclude that these differences between institutional groups mean either that some of them have too much space or others have too little, or, perhaps, that both of these alternatives are true. Such a conclusion would not be warranted because the data reported here are simply inventory data; that is, they are intended to report only what exists, not what should be.

Further, there may be reasons why such differences as those reported here do, in fact, exist. For example, small institutions may have a greater proportion of their classroom facilities devoted to smaller capacity rooms requiring proportionately more space per seat, while larger universities may have a greater proportion devoted to large lecture rooms with proportionately less space per seat. This alone would explain a greater amount of square feet of classroom space per student in small institutions. Since private institutions, as a group, are smaller than public institutions, it would also be reasonable to conclude that private institutions should have more square feet per student in classroom space.

It is not the purpose of this paper to develop any yardsticks against which to measure the differences reported here. Such indices have been, and are being, developed. Until these are better defined and more widely accepted, the findings reported here must stand as a survey of, rather than an evaluation of, existing physical facilities in the colleges and universities of the United States.

Table 1

Estimated[1/] Assignable Square Feet in the Physical Facilities of Colleges and Universities, by Type of Room and Organizational Unit: United States, September 1968

(Thousands of square feet)

Organizational unit	Total	Class-room	Labora-tory	Office	Study	Special-use	General-use	Support-ing	Medical care	Residential
Total	1,026,953	89,093	143,557	113,703	61,886	87,273	141,612	62,365	12,509	314,954
Departments of instruction and research	375,727	85,270	127,739	62,416	5,404	57,008	21,218	11,578	2,046	3,048
Organized activity units	22,709	903	1,651	2,617	398	5,269	2,480	1,236	7,661	495
Organized research units	21,299	231	11,100	3,749	253	3,230	647	1,495	395	200
Public service units	12,185	400	961	2,421	190	2,254	4,224	611	491	633
Library	61,238	373	189	2,903	53,096	1,784	1,831	1,056	5	1
General administration and institutional services	85,326	931	660	31,349	353	2,900	14,938	30,623	285	3,288
Auxiliary services	424,851	280	191	6,379	1,978	14,138	80,552	14,500	1,216	305,618
Noninstitutional agencies	6,409	185	569	1,207	106	415	2,558	510	362	497
Unassigned	17,208	519	497	664	109	277	13,161	756	49	1,175

1/To derive estimated data for all colleges and universities, the data reported by responding institutions were weighted by appropriate factors to compensate for missing data from nonrespondents. See "Methodology, Appendix A," Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

Table 2

Estimated[1/] Assignable Square Feet in the Physical Facilities of Publicly Controlled Colleges and Universities, by Type of Room and Organizational Unit: United States, September 1968

(Thousands of square feet)

Organizational unit	Total	Class-room	Labora-tory	Office	Study	Special-use	General-use	Support-ing	Medical care	Residential
Total	617,390	53,589	100,168	73,640	35,103	57,020	76,108	39,644	7,601	174,516
Departments of instruction and research	241,261	51,588	88,735	41,742	3,101	35,861	11,092	6,711	1,383	1,047
Organized activity units	15,172	500	1,141	1,764	137	4,232	1,647	765	4,792	194
Organized research units	15,633	92	7,785	2,743	211	2,946	441	1,088	135	192
Public service units	9,214	310	891	2,085	170	1,902	2,869	524	59	404
Library	34,050	148	105	1,716	29,917	176	830	616	3	--
General administration and institutional services	50,002	480	529	18,091	222	1,483	6,858	19,898	168	2,274
Auxiliary services	236,607	75	86	4,073	1,197	9,494	42,153	9,118	809	169,603
Noninstitutional agencies	3,945	51	507	936	77	172	1,501	351	205	146
Unassigned	11,504	345	389	489	72	214	8,718	572	49	656

1/To derive estimated data for all colleges and universities, the data reported by responding institutions were weighted by appropriate factors to compensate for missing data from nonrespondents. See "Methodology, Appendix A," Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

Table 3

Estimated[1/] Assignable Square Feet in the Physical Facilities of Privately Controlled Colleges and Universities, by Type of Room and Organizational Unit: United States, September 1968

(Thousands of square feet)

Organizational unit	Total	Class-room	Labora-tory	Office	Study	Special-use	General-use	Support-ing	Medical care	Residential
Total	409,562	35,503	43,389	40,063	26,783	30,253	65,503	22,722	4,908	140,438
Departments of instruction and research	134,467	33,682	39,004	20,674	2,302	21,147	10,126	4,866	664	2,001
Organized activity units	7,536	403	509	853	261	1,036	833	472	2,869	301
Organized research units	5,666	139	3,315	1,006	42	283	206	407	260	8
Public service units	2,971	90	70	336	21	352	1,356	86	433	228
Library	27,187	226	85	1,187	23,179	1,068	1,002	440	2	--
General administration and institutional services	35,324	451	130	13,258	131	1,418	8,081	10,725	117	1,014
Auxiliary services	188,244	204	105	2,305	781	4,644	38,400	5,381	407	136,015
Noninstitutional agencies	2,463	134	63	271	30	243	1,056	159	157	351
Unassigned	5,704	174	108	174	37	63	4,444	185	--	519

1/To derive estimated data for all colleges and universities, the data reported by responding institutions were weighted by appropriate factors to compensate for missing data from nonrespondents. See "Methodology, Appendix A," Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

Table 4

Assignable Square Feet in the Physical Facilities of 2,050 Responding Colleges and Universities,[1] by Type of Room and by Institutional Control and Level: United States, September 1968

(Thousands of square feet)

Type of room	Total	Publicly controlled institutions				Privately controlled institutions			
		Total	Universities	Other-4-year-and-over	Two-year	Total	Universities	Other-4-year-and-over	Two-year
Total[2]	925,383	583,577	327,923	185,551	70,103	341,806	93,848	227,512	20,445
Classroom	79,722	49,996	19,096	17,820	13,080	29,726	6,374	20,870	2,483
Laboratory	130,533	94,665	55,911	22,151	16,603	35,869	14,235	20,222	1,412
Office	103,080	69,923	45,069	17,329	7,525	33,158	12,734	19,105	1,319
Study	55,473	33,133	18,110	10,290	4,733	22,340	6,438	14,726	1,176
Special-use	79,010	53,736	28,024	17,444	8,268	25,275	6,261	17,140	1,874
General-use	126,785	71,763	37,623	24,092	10,048	55,022	10,881	40,382	3,759
Supporting	56,488	37,574	22,928	10,501	4,145	18,914	5,665	12,083	1,166
Medical care	11,318	7,318	6,298	950	69	4,000	2,327	1,638	35
Residential	282,973	165,470	94,863	64,974	5,633	117,503	28,935	81,347	7,221

1/For more detailed information on responding institutions, see appendix B in the Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

2/Table 4 includes all reported assignable square feet; for "total in-use" space, see table 5.

Table 5

Assignable Square Feet in the Physical Facilities of
2,050 Responding Colleges and Universities,[1/]
by Selected Organizational Units and by Institutional Control and Level:
United States, September 1968

(Thousands of square feet)

Organizational unit	Total	Publicly controlled institutions				Privately controlled institutions			
		Total	Universities	Other-4-year-and-over	Two-year	Total	Universities	Other-4-year-and-over	Two-year
Total in-use[2/]	903,892	568,932	318,461	182,758	67,716	334,962	92,209	222,678	20,076
Total academic	522,007	344,716	190,057	98,664	55,998	177,292	55,403	111,750	10,140
Total instructional, departmental research, and library	393,698	259,102	132,720	78,663	47,721	134,597	40,271	86,314	8,013
Departments of instruction and research	338,932	227,031	116,273	68,110	42,649	111,901	33,858	71,167	6,876
Library	54,766	32,071	16,447	10,553	5,072	22,696	6,413	15,147	1,137
Total other academic	128,307	85,614	57,337	20,001	8,277	42,696	15,133	25,436	2,127
Organized activity	20,661	14,475	10,025	4,049	402	6,186	3,081	3,008	97
Organized research	19,670	15,119	14,297	753	69	4,552	3,373	1,158	20
Public service	11,292	8,846	7,400	876	570	2,447	1,051	1,286	110
General administration and institutional services	76,684	47,174	25,615	14,323	7,236	29,511	7,628	19,984	1,900
Residential	282,973	165,470	94,864	64,974	5,632	117,503	28,935	81,347	7,221
Other auxiliary	98,912	58,746	33,540	19,120	6,086	40,167	7,871	29,581	2,715

1/For more detailed information on responding institutions, see appendix B in the Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

2/"Total in-use" square feet excludes space assigned to the noninstitutional agencies and unassigned categories. For all reported assignable square feet, see table 4.

Table 6

Percentage Distribution of Assignable Square Feet in the Physical Facilities of 2,050 Responding Colleges and Universities,[1/] by Institutional Enrollment Size and by Type of Room: United States, September 1968

Type of room	Enrollment size						
	500 and below	501-999	1,000-2,499	2,500-4,999	5,000-9,999	10,000-24,999	25,000 and above
Classroom	11	10	10	11	8	7	6
Laboratory	8	10	11	13	14	16	19
Office	7	8	8	10	11	13	17
Study	7	6	6	6	6	6	6
Special-use	8	8	9	9	9	9	7
General-use	22	18	17	14	13	12	8
Supporting	7	5	6	6	6	6	8
Medical care	1	2	*	1	1	1	3
Residential	29	33	33	31	33	30	26

1/For more detailed information on responding institutions, see appendix B in the Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.
*Less than one-half of 1 percent.

Table 7

Percentage Distribution of Assignable Square Feet in the Physical Facilities of 907 Responding Publicly Controlled Colleges and Universities,[1/] by Institutional Enrollment Size and by Type of Room: United States, September 1968

Type of room	Enrollment size						
	500 and below	501-999	1,000-2,499	2,500-4,999	5,000-9,999	10,000-24,999	25,000 and above
Classroom	17	14	14	12	9	7	6
Laboratory	17	19	16	14	14	16	19
Office	9	10	10	9	10	13	17
Study	6	6	7	6	5	6	6
Special-use	10	10	10	10	10	9	7
General-use	19	14	15	14	12	13	8
Supporting	7	6	6	7	5	6	8
Medical care	*	4	1	1	*	1	3
Residential	15	18	22	28	35	30	26

1/For more detailed information on responding institutions, see appendix B in the Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

*Less than one-half of 1 percent.

Table 8

Percentage Distribution of Assignable Square Feet in the Physical Facilities of 1,143 Responding Privately Controlled Colleges and Universities,[1/] by Institutional Enrollment Size and by Type of Room: United States, September 1968

Type of room	Enrollment size						
	500 and below	501-999	1,000-2,499	2,500-4,999	5,000-9,999	10,000-24,999	25,000 and above
Classroom	10	9	9	9	7	8	7
Laboratory	7	8	9	12	15	14	17
Office	7	7	8	11	14	14	17
Study	8	6	6	7	7	6	7
Special-use	8	7	8	7	7	8	*
General-use	22	19	17	13	14	11	8
Supporting	7	5	6	5	6	6	6
Medical care	1	2	*	1	2	2	21
Residential	31	37	37	35	29	32	19

1/For more detailed information on responding institutions, see appendix B in the Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.
*Less than one-half of 1 percent.

Table 9

Selected Statistics Based Upon Gross Square Feet,[1] Assignable Square Feet, Number of Responding Institutions,[2] and Number of Full-Time-Equivalent Students,[3] by Institutional Control and Level: United States, September 1968

Item	All institutions	Publicly controlled institutions				Privately controlled institutions			
		All public institutions	Universities	Other-4-year-and-over	Two-year	All private institutions	Universities	Other-4-year-and-over	Two-year
Gross square feet (in thousands)	1,338,892	840,191	480,619	263,649	95,923	498,701	142,983	326,882	28,835
Assignable square feet (in thousands)	925,383	583,577	327,923	185,551	70,103	341,806	93,849	227,512	20,445
Ratio of assignable to gross square feet	.69	.69	.68	.70	.73	.69	.66	.70	.71
Number of responding institutions	2,050	907	92	298	517	1,143	54	883	206
Average assignable square feet (in thousands) per responding institution	451	643	3,565	623	136	299	1,738	258	99
Number of full-time-equivalent students (in thousands) in responding institutions	5,453	4,001	1,694	1,302	1,005	1,451	436	914	101
Average number of full-time-equivalent students per responding institution (based on nonrounded data)	2,660	4,412	18,412	4,370	1,944	1,270	8,066	1,035	492

1/For the definition of gross square feet, see pp. 18-19 of Higher Education Facilities Classification and Inventory Procedures Manual.

2/For more detailed information on responding institutions, see appendix B in the Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

3/Full-time-equivalent (FTE) students are the sum of all full-time students plus one-third of all the part-time students.

Table 10

Average Number of Assignable Square Feet per Institution and Average Number of Full-Time-Equivalent Students[1/] for 2,050 Responding Colleges and Universities,[2/] by Type of Room and by Institutional Control and Level: United States, September 1968

(Thousands of square feet)

Type of room	2,050 Institutions	Publicly controlled institutions				Privately controlled institutions			
		907 Public institutions	92 Universities	298 Other-4-year-and-over	517 Two-year	1,143 Private institutions	54 Universities	883 Other-4-year-and-over	206 Two-year
Total	451	643	3,565	623	136	299	1,738	258	99
Classroom	39	55	208	60	25	26	118	24	12
Laboratory	64	104	608	74	32	31	264	23	7
Office	50	77	490	58	15	29	236	22	6
Study	27	37	197	35	9	20	119	17	6
Special-use	39	59	305	59	16	22	116	19	9
General-use	62	79	409	81	19	48	202	46	18
Supporting	28	41	249	35	8	17	105	14	6
Medical care	6	8	68	3	*	3	43	2	*
Residential	138	182	1,031	218	11	103	536	92	35
Average number of full-time-equivalent students per responding institution	2,660	4,412	18,412	4,370	1,944	1,270	8,066	1,035	492

1/Full-time-equivalent (FTE) students are the sum of all full-time students plus one-third of all the part-time students.

2/For more detailed information on responding institutions, see appendix B in the Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

*Less than one-half square foot.

Table 11

Average Number of Assignable Square Feet per Institution and Average Number of Full-Time-Equivalent Students[1/] for 2,050 Responding Colleges and Universities,[2/] by Selected Organizational Units and by Institutional Control and Level: United States, September 1968

(Thousands of square feet)

Organizational unit	2,050 Institutions	Publicly controlled institutions				Privately controlled institutions			
		907 Public institutions	92 Universities	298 Other-4-year-and-over	517 Two-year	1,143 Private institutions	54 Universities	883 Other-4-year-and-over	206 Two-year
Total in-use[3/]	441	627	3,462	613	131	293	1,708	252	97
Total academic	255	380	2,066	331	108	155	1,026	127	49
Total instructional, departmental research, and library	192	286	1,443	264	92	118	746	98	39
Departments of instruction and research	165	250	1,264	229	82	98	627	81	33
Library	27	35	179	35	10	20	119	17	6
Total other academic	63	94	623	67	16	37	280	29	10
Organized activity	10	16	109	14	1	5	57	3	*
Organized research	10	17	155	3	*	4	62	1	*
Public service	6	10	80	3	1	2	19	1	1
General administration and institutional services	37	52	278	48	14	26	141	23	9
Residential	138	182	1,031	218	11	103	536	92	35
Other auxiliary	48	65	365	64	12	35	146	34	13
Average number of full-time-equivalent students per responding institution	2,660	4,412	18,412	4,370	1,944	1,270	8,066	1,035	492

1/Full-time-equivalent (FTE) students are the sum of all full-time students plus one-third of all the part-time students.

2/For more detailed information on responding institutions, see appendix B in the Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

3/"Total in-use" square feet excludes space assigned to the noninstitutional agencies and unassigned categories. For all reported assignable square feet, see table 4.

*Less than one-half square foot.

Table 12

Assignable Square Feet per FTE Student[1] in the Physical Facilities of 2,050 Responding Colleges and Universities,[2] by Type of Room and by Institutional Control and Level: United States, September 1968

Type of room	Total	Publicly controlled institutions				Privately controlled institutions			
		Total	Universities	Other 4-year-and-over	Two-year	Total	Universities	Other 4-year-and-over	Two-year
Total[3]	170	146	194	143	70	236	215	249	202
Classroom	15	12	11	14	13	20	15	23	24
Laboratory	24	24	33	17	17	25	33	22	14
Office	19	17	27	13	7	23	29	21	13
Study	10	8	11	8	5	15	15	16	12
Special-use	14	13	17	13	8	17	14	19	18
General-use	23	18	22	18	10	38	25	44	37
Supporting	10	9	14	8	4	13	13	13	12
Medical care	2	2	4	1	*	3	5	2	*
Residential	52	41	56	50	6	81	66	89	71

1/Full-time-equivalent (FTE) students are the sum of all full-time students plus one-third of all the part-time students.

2/For more detailed information on responding institutions, see appendix B in the Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

3/Table 12 is based on total assignable square feet as reported in table 4.

Table 13

Assignable Square Feet per FTE Student[1] in the Physical Facilities of 2,050 Responding Colleges and Universities,[2] by Selected Organizational Units and by Institutional Control and Level: United States, September 1968

Organizational unit	Total	Publicly controlled institutions				Privately controlled institutions			
		Total	Universities	Other 4-year-and-over	Two-year	Total	Universities	Other-4-year-and-over	Two-year
Total in-use[3]	166	142	188	140	67	231	212	244	198
Total academic	96	86	112	76	56	122	127	122	100
Total instructional, departmental research, and library	72	65	78	60	47	93	92	94	79
Departments of instruction and research	62	57	69	52	42	77	78	78	68
Library	10	8	10	8	5	16	15	17	11
Total other academic	24	21	34	15	8	29	35	28	21
Organized activity	4	4	6	3	*	4	7	3	1
Organized research	4	4	8	1	*	3	8	1	*
Public service	2	2	4	1	1	2	2	1	1
General administration and institutional services	14	12	15	11	7	20	18	22	19
Residential	52	41	56	50	6	81	66	89	71
Other auxiliary	18	15	20	15	6	28	18	32	27

1/Full-time-equivalent (FTE) students are the sum of all full-time students plus one-third of all the part-time students.

2/For more detailed information on responding institutions, see appendix B in the Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

3/Table 13 is based on total in-use assignable square feet as reported in table 5.

Table 14

Percentage Distribution of Assignable Square Feet in the Physical Facilities of Responding Public Colleges and Universities,[1/] by Institutional Enrollment Size and by Type of Room: United States, December 1957 and September 1968

Type of room	All public institutions		Enrollment size											
			500 and below		501-999		1,000-2,499		2,500-4,999		5,000-9,999		10,000 and above	
	1957	1968	1957	1968	1957	1968	1957	1968	1957	1968	1957	1968	1957	1968
Classroom	10	9	14	17	10	14	11	14	10	12	9	9	9	7
Laboratory	18	16	17	17	14	19	14	16	18	14	19	14	20	17
Office	9	12	6	9	7	10	7	10	8	9	10	10	11	14
Study	5	6	5	6	4	6	5	7	5	6	5	5	6	6
Special-use	12	9	14	10	11	10	15	10	13	10	11	10	11	8
General-use	11	12	12	19	12	14	13	15	11	14	11	12	11	11
Supporting	6	6	4	7	7	6	5	6	5	7	5	5	6	7
Medical care	2	1	3	*	4	4	2	1	1	1	*	*	3	1
Residential	27	28	26	15	31	18	29	22	29	28	29	35	24	28

1/For more detailed information on responding institutions, see appendix B in the Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

*Less than one-half of 1 percent.

Table 15

Percentage Distribution of Assignable Square Feet in the Physical Facilities of Responding Private Colleges and Universities 1/ by Institutional Enrollment Size and by Type of Room: United States, December 1957 and September 1968

Type of room	All public institutions		Enrollment size											
			500 and below		501-999		1,000-2,499		2,500-4,999		5,000-9,999		10,000 and above	
	1957	1968	1957	1968	1957	1968	1957	1968	1957	1968	1957	1968	1957	1968
Classroom	11	9	10	10	11	9	11	9	10	9	10	7	11	7
Laboratory	12	10	8	7	8	7	10	9	13	12	17	15	22	14
Office	8	9	5	7	6	7	7	8	9	11	10	14	13	14
Study	6	7	6	8	6	6	6	6	7	7	6	7	7	6
Special-use	10	8	8	8	10	7	10	8	11	7	9	7	10	8
General-use	12	17	13	22	13	19	12	17	12	13	12	14	11	11
Supporting	4	6	3	6	4	5	4	5	4	5	4	6	6	6
Medical care	1	1	2	1	1	2	--	*	1	1	4	2	1	2
Residential	36	35	44	31	41	37	40	37	34	35	28	29	21	31

1/For more detailed information on responding institutions, see appendix B in the Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

*Less than one-half of 1 percent.

Table 16

Comparison of Assignable Square Feet per Degree-Credit Student in the Physical Facilities of Colleges and Universities,[1] by Type of Room and by Institutional Control: United States, December 1957 and September 1968

Type of room[2]	All institutions		Publicly controlled		Privately controlled	
	1957	1968	1957	1968	1957	1968
Total[3]	151	147	143	125	162	199
Classroom	15	13	14	11	17	17
Laboratory	23	21	25	20	19	21
Office	13	16	13	15	12	19
Study	9	9	8	7	10	13
Special-use	17	12	17	12	16	15
General-use	18	20	16	15	20	32
Supporting	7	9	8	8	6	11
Medical care	2	2	2	2	2	2
Residential	47	45	39	35	59	68

1/Facilities data for 1957 were "inflated" by assuming the nonresponding institutions had the same ratio of assignable square feet to degree-credit students as that in responding institutions. For degree-credit enrollments, see table 1 and for facilities data, tables 81 and 82 of College and University Facilities Survey, Part 3: Inventory of College and University Physical Facilities. Data for 1968 are based on "inflated" data. See appendix A of Inventory of Physical Facilities in Institutions of Higher Education: Fall 1968.

2/For the method used in converting the 1957 facilities classification to the 1968 system, see Appendix.

3/The totals for 1957 are based upon data for responding institutions; the totals for 1968 are based on the estimated total for all institutions. See footnote 1, above.

APPENDIX

Correspondence Between Terminology Used in the Facilities Construction Program and 1968 Inventory Classification Scheme

Regulations associated with the Higher Education Facilities Act of 1963 (HEFA) provide certain definitions related to the facilities of colleges and universities.[1/] Inclusions and exclusions are specified for such terms as "academic facilities," "instructional and library facilities," and so on.

In broad terms, "academic facilities" include three major subcategories of space: "instructional and library facilities," "instruction-related facilities," and "related supporting facilities."

"Instructional and library facilities" include "general classrooms," "instructional laboratories or shops," "other teaching facilities," "service areas for teaching facilities," "library facilities," and "faculty offices."

"Instruction-related facilities" include "research facilities," "administrative facilities," "student study facilities," and "other instruction-related facilities."

In translating the 1968 inventory data to the HEFA classification scheme, the following equality of definitions was assumed:

"Academic facilities" were assumed to be the same as the facilities included in the following organizational units, after the removal of any residential type of space from each category: departments of instruction and research, organized activity, organized research, public service, library, and general administration and institutional services. That is, the term "academic facilities" excludes all residential, auxiliary, noninstitutional agency, unassigned, and nonassignable spaces.

"Instructional and library facilities" were assumed to be the same as departments of instruction and research plus library organizational units.

"Instruction-related facilities," which are titled "total other academic" in this report, were assumed to include organized activity, organized research, public service, and general administration and institutional services organizational units.

1/ Financial Assistance for Construction of Higher Education Facilities, Regulations, Higher Education Facilities Act of 1963, OE-51008. U.S. Department of Health, Education, and Welfare, Office of Education, Washington: U.S. Government Printing Office, 1964.

Correspondence Between Terminology Used in the 1957 and 1968 Inventory Classification Schemes

The 1957 and 1968 facilities surveys were different in certain respects. The 1957 survey requested information on a building-by-building basis. The 1968 survey asked for summary data on an institutional (by campus) basis.

The classification system in the 1957 survey sought assignable square feet data on the basis of predetermined multifactor categories; for example, chemistry research facilities represented a single category for reporting purposes. The 1968 survey was based upon a multidimensional scheme of four independent factors: type of room, organizational unit, subject field, and function. Only abbreviated versions of the first three of these factors were actually employed in the 1968 data request.

Because the 1957 classification system did not identify most spaces by organizational unit or subject field, it was not possible to convert the 1957 data into comparable 1968 organizational unit categories. For example, instructional laboratories and faculty offices were not classified by organizational unit or subject field.

Because the 1968 survey did not request data by function, it was not possible to make a comparison on that basis.

It was possible, however, to equate, within reasonable limits, the two systems on the basis of type of room.

In converting the data from the 1957 classification scheme to comparable 1968 room-type categories, the following identities were assumed:

1968 Type of room	1957 Facilities category
Classroom	General or academic classrooms
Laboratory	Instructional laboratories and shops All research facilities
Office	Faculty offices Staff offices
Study	Library

1968 Type of room	1957 Facilities category
Special-use	Educational laboratory schools
	Home management laboratory houses
	Other instructional
	Physical education
	Armories
	Extension service and experiment stations
	Multipurpose
General-use	Museum
	Hotel-type accommodations
	Auditoriums
	Chapels
	Faculty clubs
	Nonteaching hospital
	Other general
	Theaters
	All auxiliary facilities
Supporting	Garages
	General storage
	Maintenance shops, stores, and services
	Power and heating plant
Medical care	Teaching hospital
Residential	Total residential facilities less hotel-type accommodations

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